

Result		%					
No.	Score	Query Match	Length	DB	ID	Description	
1	1566	100.0	300	1	GGPP_HUMAN	Q95749	h geranylge
2	1516	96.8	294	1	GGPP_BOVIN	P56966	b geranylge
3	1476	94.3	300	1	GGPP_MOUSE	Q9wtn0	m geranylge
4	797.5	50.9	428	1	GGPP_NEUCR	P24322	n geranylge
5	754.5	48.2	418	1	GGPP_GIBFU	Q92236	g geranylge
6	292	18.6	327	1	IDSA_METJA	Q58270	methanococc
7	233.5	14.9	324	1	IDSA_METTM	Q53479	methanobact
8	231.5	14.8	325	1	IDSA_METTH	O26156	methanobact
9	217	13.9	323	1	PREA_CYAPA	P31171	cyanophora
10	211.5	13.5	332	1	GGPP_SULSO	P95999	sulfolobus
11	208.5	13.3	323	1	ISPB_ECOLI	P19641	escherichia
12	207	13.2	330	1	GGPP_SULAC	P39464	sulfolobus
13	195	12.5	348	1	HEP2_BACSU	P31114	bacillus su
14	184	11.7	323	1	PREA_CYACA	Q9t1s1	cyanidium c
15	182.5	11.7	329	1	ISPB_HAEIN	P44916	haemophilus
16	173	11.0	320	1	HEP2_BACST	P55785	bacillus st
17	165	10.5	323	1	PREA_SYNY3	P72580	synechocyst
18	163.5	10.4	295	1	ISPA_HAEIN	P45204	haemophilus
19	163.5	10.4	323	1	PREA_PORPU	P51268	porphyra pu
20	159	10.2	272	1	ISPA_BACSU	P54383	bacillus su
21	158	10.1	300	1	CRTE_CYAPA	P48368	cyanophora
22	154.5	9.9	297	1	ISPA_BACST	Q08291	bacillus st
23	150.5	9.6	369	1	GGPP_CAPAN	P80042	capsicum an
24	149	9.5	378	1	DPS_SCHPO	O43091	schizosacch
25	148	9.5	299	1	ISPA_ECOLI	P22939	escherichia
26	144	9.2	371	1	GGPP_ARATH	P34802	arabidopsis
27	142.5	9.1	366	1	GGPP_SINAL	Q43133	sinapis alb
28	141.5	9.0	262	1	ISPA_AQUAE	O66952	aquifex aeo
29	140.5	9.0	347	1	FPPS_SCHPO	O14230	schizosacch
30	138	8.8	357	1	GGPP_CATRO	Q42698	catharanthu
31	137	8.7	353	1	FPPS_HUMAN	P14324	homo sapien
32	136.5	8.7	347	1	FPPS_GIBFU	Q92235	gibberella
33	133.5	8.5	291	1	ISPA_MICLU	O66126	micrococcus
34	132.5	8.5	353	1	FPPS_RAT	P05369	r farnesyl
35	132	8.4	288	1	CRTE_RHOSH	P54976	rhodobacter
36	130.5	8.3	347	1	FPPS_NEUCR	Q92250	neurospora
37	129	8.2	359	1	GGPP_MYCTU	Q50727	m probable
38	128.5	8.2	349	1	FPPS_KLULA	P49349	kluveromyc
39	126.5	8.1	367	1	FPPS_CHICK	P08836	gallus gall
40	123	7.9	384	1	FPP1_ARATH	Q09152	arabidopsis
41	122.5	7.8	282	1	ISPA_BUCAI	P57537	buchnera ap
42	121.5	7.8	294	1	ISPA_BUCAP	Q8k9a0	buchnera ap
43	120	7.7	289	1	CRTE_RHOCA	P17060	rhodobacter
44	120	7.7	302	1	CRTE_PANAN	P21684	pantoea ana
45	119.5	7.6	352	1	FPPS_YEAST	P08524	saccharomyc

ALIGNMENTS

RESULT 1

GGPP_HUMAN

ID GGPP_HUMAN STANDARD; PRT; 300 AA.

AC 095749;
 DT 30-MAY-2000 (Rel. 39, Created)
 DT 30-MAY-2000 (Rel. 39, Last sequence update)
 DT 10-OCT-2003 (Rel. 42, Last annotation update)
 DE Geranylgeranyl pyrophosphate synthetase (GGPP synthetase) (GGPPSASE)
 DE (Geranylgeranyl diphosphate synthase) [Includes:
 DE Dimethylallyltransferase (EC 2.5.1.1); Geranyltranstransferase
 DE (EC 2.5.1.10); Farnesyltranstransferase (EC 2.5.1.29)].
 GN GGPS1.
 OS Homo sapiens (Human).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
 OX NCBI_TaxID=9606;
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 RP SEQUENCE FROM N.A.
 RC TISSUE=Fetal heart;
 RX MEDLINE=98412715; PubMed=9741684;
 RA Ericsson J., Greene J.M., Carter K.C., Shell B.K., Duan D.R.,
 RA Florence C., Edwards P.A.;
 RT "Human geranylgeranyl diphosphate synthase: isolation of the cDNA,
 RT chromosomal mapping and tissue expression.";
 RL J. Lipid Res. 39:1731-1739(1998).
 RN [2]
 RP SEQUENCE FROM N.A.
 RC TISSUE=Testis;
 RX MEDLINE=99150380; PubMed=10026212;
 RA Kuzuguchi T., Morita Y., Sagami I., Sagami H., Ogura K.;
 RT "Human geranylgeranyl diphosphate synthase. cDNA cloning and
 RT expression.";
 RL J. Biol. Chem. 274:5888-5894(1999).
 RN [3]
 RP SEQUENCE FROM N.A.
 RA Misawa N., Okazaki H., Noguchi Y., Tatsuno I., Saito Y., Yasuda T.,
 RA Hirai A.;
 RT "Study on isolation of a geranylgeranyl pyrophosphate (GGPP) synthase
 RT cDNA and its expression - development of a new assay system of gene
 RT functions.";
 RL Proc. Jpn. Conf. Biochem. Lipids 41:293-296(1999).
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 RP SEQUENCE FROM N.A.
 RC TISSUE=Pituitary;
 RX MEDLINE=20402571; PubMed=10931946;
 RA Hu R.-M., Han Z.-G., Song H.-D., Peng Y.-D., Huang Q.-H., Ren S.-X.,
 RA Gu Y.-J., Huang C.-H., Li Y.-B., Jiang C.-L., Fu G., Zhang Q.-H.,
 RA Gu B.-W., Dai M., Mao Y.-F., Gao G.-F., Rong R., Ye M., Zhou J.,
 RA Xu S.-H., Gu J., Shi J.-X., Jin W.-R., Zhang C.-K., Wu T.-M.,
 RA Huang G.-Y., Chen Z., Chen M.-D., Chen J.-L.;
 RT "Gene expression profiling in the human hypothalamus-pituitary-adrenal
 RT axis and full-length cDNA cloning.";
 RL Proc. Natl. Acad. Sci. U.S.A. 97:9543-9548(2000).
 RN [5]
 RP SEQUENCE FROM N.A.
 RC TISSUE=Liver, and Spleen;
 RX MEDLINE=99203156; PubMed=10101267;
 RA Kainou T., Kawamura K., Tanaka K., Matsuda H., Kawamukai M.;
 RT "Identification of the GGPS1 genes encoding geranylgeranyl diphosphate
 RT synthases from mouse and human.";

RL Biochim. Biophys. Acta 1437:333-340(1999).
 RN [6]
 RP SEQUENCE FROM N.A.
 RA Zhang M., Yu L., Hu P., Bi A., Zhang Q., Xu M., Zhao S.;
 RT "Molecular cloning and expression analysis of a novel human cDNA
 RT encoding a protein homologous to Neurospora crassa geranylgeranyl
 RT pyrophosphate synthetase.";
 RL Submitted (APR-1998) to the EMBL/GenBank/DDBJ databases.
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 RP SEQUENCE FROM N.A.
 RC TISSUE=Kidney;
 RX MEDLINE=22388257; PubMed=12477932;
 RA Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
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 RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
 RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
 RA Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
 RA Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
 RA Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
 RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
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 RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
 RA Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
 RA Fahey J., Helton E., Kettelman M., Madan A., Rodrigues S., Sanchez A.,
 RA Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
 RA Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
 RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
 RA Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,
 RA Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.;
 RT "Generation and initial analysis of more than 15,000 full-length
 RT human and mouse cDNA sequences.";
 RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
 CC -!- FUNCTION: CATALYZES THE TRANS-ADDITION OF THE THREE MOLECULES OF
 CC IPP ONTO DMAPP TO FORM GERANYLGERANYL PYROPHOSPHATE, AN IMPORTANT
 CC PRECURSOR OF CAROTENOIDS AND GERANYLATEDGERANYLATED PROTEINS.
 CC -!- CATALYTIC ACTIVITY: Dimethylallyl diphosphate + isopentenyl
 CC diphosphate = diphosphate + geranyl diphosphate.
 CC -!- CATALYTIC ACTIVITY: Geranyl diphosphate + isopentenyl diphosphate
 CC = diphosphate + trans,trans-farnesyl diphosphate.
 CC -!- CATALYTIC ACTIVITY: Trans-trans-farnesyl diphosphate + isopentenyl
 CC diphosphate = diphosphate + geranylgeranyl diphosphate.
 CC -!- PATHWAY: Isoprenoid biosynthesis.
 CC -!- SUBUNIT: Homooctamer.
 CC -!- SUBCELLULAR LOCATION: Cytoplasmic.
 CC -!- TISSUE SPECIFICITY: ABUNDANTLY EXPRESSED IN TESTIS. FOUND IN OTHER
 CC TISSUES TO A LOWER EXTENT.
 CC -!- SIMILARITY: Belongs to the FPP/GGPP synthetase family.
 CC -----
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 CC -----
 DR EMBL; AB017971; BAA75909.1; -.

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 100 105 110
 Lys Leu Phe Thr Arg Gln Leu Leu Glu Leu His Gln Gly Gln Gly Leu
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 Gly Leu Met Gln Leu Phe Ser Asp Tyr Lys Glu Asp Leu Lys Pro Leu
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yys

380
2-15